

NEW NORTH AMERICAN SPECIES OF EUCOSMINI
(LEPIDOPTERA: TORTRICIDAE)

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Abstract.—*Phaneta clarkei*, *Eucosma sierrae*, and *Eucosma ustulatana* are described from males only, all from Texas. *Suleima medaciana* is described from males and females from Texas. *Phaneta musetta* is described from a male and female from New Mexico and Texas, respectively. *Gretchena nymphana* is described from males and females from Texas, Mississippi, and Kentucky. Imagines and genitalia are figured.

The species described below, save one, were included in a recent shipment by the authors to the National Museum of Natural History, Washington, D.C., where they were found to represent new taxa. The type series in two cases has been supplemented by NMNH specimens. The last species described has been long known by the authors to be undescribed, but recently the type series has been supplemented by specimens from the collections of Bryant Mather in Mississippi, and the Academy of Natural Sciences in Philadelphia (loaned by Dr. Richard L. Brown). At this writing, the reserve of undescribed Texas Eucosmini is far from exhausted, as many apparently new taxa are known from female examples only.

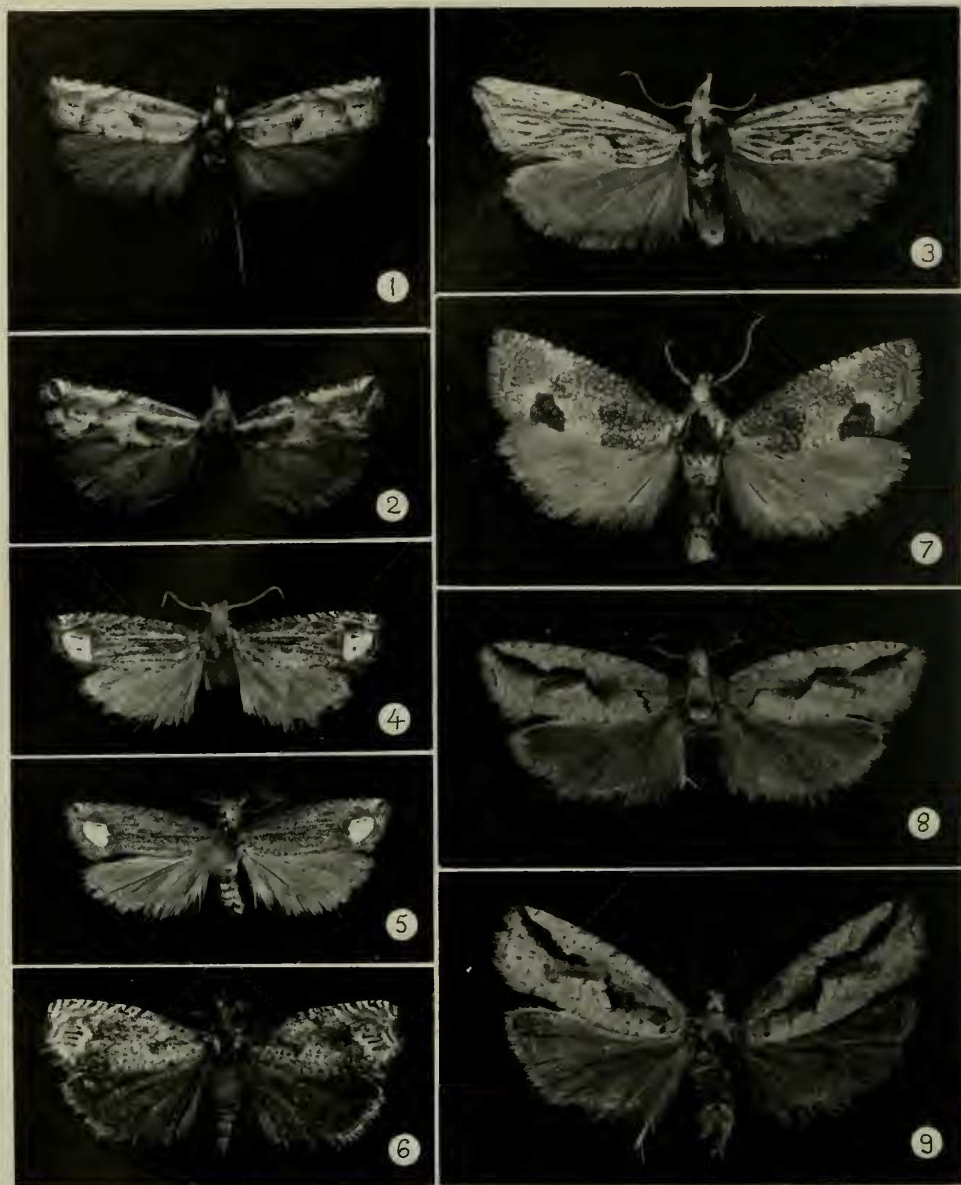
***Phaneta musetta* Blanchard and Knudson, NEW SPECIES**

Description.—*Head:* Front and vertex whitish, rough scaled. Labial palpus whitish, exceeding front by 2 eye diameters. Antenna simple, fuscous, scaled dorsolaterally, undersurface finely pubescent. Collar whitish.

Thorax: Tegula and patagia composed of white tipped pale brown scales, mesonotum light brown.

Forewings: Ground color white with well defined fuscous basal patch extending over basal $\frac{1}{3}$, angled outwardly from dorsum to cell, interrupted by a streak of ground color along cell and narrowly edged with white along costa. Outer $\frac{1}{3}$ of wing much suffused with fuscous, with outwardly angled postmedian fascia extending from costa near middle to outer $\frac{1}{3}$ of dorsum. Outer $\frac{2}{3}$ of costa fuscous with 4 strong white strigulations, the basal and apical strigulations geminate. Strigulations connected below costa forming a white subcostal streak. Ocelloid patch white with 1 horizontal black bar in upper portion. Fringe composed of multiple scale rows banded with white and fuscous. Undersurface of wing uniformly fuscous except for costal strigulations, which are repeated as above.

Hindwings: Fuscous, slightly paler toward base. Fringe pale fuscous with darker bands.



Figs. 1-9. Dorsal view of adults. 1, *Phaneta musetta*, holotype ♂, Socorro Co., N. Mex., Gran Quivara Nat. Monument, 6600', 1-3-VII-64, D. R. Davis, coll. 2, *P. musetta*, paratype ♀, Tarrant Co., Tex., Benbrook Reservoir, 30-IV-78, E. Knudson, coll. 3, *P. clarkei*, holotype ♂, Hemphill Co., Tex., Canadian Nat. Grassland, Lake Marvin, 9-X-82, E. Knudson, coll. 4, *Suleima mendaciana*, holotype ♂, Brewster Co., Tex., Big Bend Nat. Park, Dugout Wells, 28-IX-81, E. Knudson, coll. 5, *S. mendaciana*, paratype ♀, Cameron Co., Tex., South Padre Island, 24-X-82, E. Knudson, coll. 6, *Eucosma ustulatana*, holotype ♂, Washington Co., Tex., Brenham, 4-VI-79, E. Knudson, coll. 7, *E. sierrae*, holotype ♂, Culberson Co., Tex., Sierra Diablo Wildlife Management Area, 6400', 30-VIII-70, J. G. Franclemont, coll. 8, *Gretchena nymphana*, holotype ♂, Anderson Co., Tex., Tennessee Colony (Gus Engeling Wildlife Management Area), 15-IV-68, A. and M. E. Blanchard, colls. 9, *G. nymphana*, paratype ♀, Warren Co., Miss., Vicksburg, 25-III-82, B. Mather, coll.

Length of forewing: Male: (1 example) 7.1 mm.; female: (1 example) 6.8 mm.

Male genitalia: As in Fig. 10, from holotype.

Female genitalia (Fig. 16): Ovipositor moderately elongate; lamina postvaginalis arcuate, lightly sclerotized; caudal $\frac{1}{2}$ of ductus bursae partially sclerotized; ductus seminalis from near middle of ductus bursae; bursa membranous, with 2 large thornlike signa.

Holotype (Fig. 1).—♂, Socorro Co., New Mexico, Gran Quivara Nat. Monument, 6600', 1-3-VII-64, collected by D. R. Davis, and deposited in the National Museum of Natural History.

Paratype (Fig. 2).—♀, Tarrant Co., Texas, Benbrook Reservoir, 30-IV-78, collected by E. Knudson.

Remarks.—Dr. J. F. Gates Clarke, who has examined the types, has made the following comment: "*P. musetta* is very closely related to *P. influana* (Heinrich), but differs from it by having a single black bar in the ocelloid patch; *influana* has two. Moreover, *musetta* has three well defined wedge shaped dark marks in the apical $\frac{2}{5}$ of costa, which are lacking or obsolete in *influana*." The authors, who have examined type specimens of *influana*, note that in comparison with *musetta*, *influana* is darker, with a more pronounced brown color to the dark markings. There are no specific differences in the male or female genitalia of the two species.

***Phaneta clarkei* Blanchard and Knudson, NEW SPECIES**

Figs. 3, 11

Description.—*Head:* Front and vertex rough scaled, yellowish. Labial palpus whitish yellow, exceeding front by 2 eye diameters. Antenna simple, whitish yellow, clothed dorsolaterally with scales, very finely pubescent ventrally. Collar whitish yellow.

Thorax: Tegula and patagia whitish yellow; mesonotum whitish yellow with brownish median stripe.

Forewing: Overall coloration light yellowish tan with darker striations of varying intensity. Under magnification, veins appear whitish, intervenular spaces and striations consist of scale rows of 2 different colors: dark brown centrally and beige on each side. Beige substantially continuous; dark brown more or less discontinuous, occurring along most streaks in well marked specimens, but nearly absent in lighter examples. Obscure lighter patches occur on mid-dorsum, outer $\frac{2}{5}$ of costa, and tornus, indicated mainly by a reduction of dark brown scaling of striations. Ocelloid patch absent. Fringe whitish yellow with narrow brown band near base. Undersurface of wing brownish fuscous except for outer $\frac{2}{5}$ of costa, which is light ochreous.

Hindwing: Pale fuscous. Fringe lighter with 2 obscure darker bands.

Length of forewing: Male: ($N = 12$) 7.5–9.2 mm., average 8.5 mm.

Male genitalia: As in Fig. 11.

Holotype.—♂, Hemphill Co., Texas, Canadian National Grassland, Lake Marvin, 9-X-82, collected by E. Knudson and deposited in the National Museum of Natural History.

Paratypes.—Cottle Co., Texas, Matador Wildlife Management Area, near Paducah, 8-X-82, collected by E. Knudson, 10 ♂; same locality, 4-VI-70, 1 ♂, collected by A. and M. E. Blanchard.

Remarks.—Dr. J. F. Gates Clarke, who has examined type specimens, made

the following comments: "This species is closely related to both *P. grindeliana* (Busck) and *stramineana* (Walsingham). From both it is distinguished by the absence of strong patches of setae at the base of the costa of the harpe. The forewing of *clarkei* exhibits distinct longitudinal striations, absent in *grindeliana* and *stramineana*, although some specimens of *grindeliana* show very weak streaking." The authors take pleasure in naming this new species in honor of Dr. J. F. Gates Clarke in recognition of his many contributions to Lepidopterozoology, and in gratitude for the great amount of assistance he has given the authors in their ongoing study of the Lepidoptera of Texas.

***Suleima mendaciana* Blanchard and Knudson, NEW SPECIES**

Figs. 4, 5, 12, 17

Description.—*Head:* Front and vertex light orange brown, scales tousled. Labial palpus fuscous, tinged with orange brown, exceeding front by 1 eye diameter. Antenna simple, fuscous, very lightly pubescent ventrally. Collar light orange brown.

Thorax: Tegula and patagia light orange brown; mesonotum orange brown shading to fuscous.

Venation: Forewing: R_4 and R_5 united. Hindwing: R_s and M_1 stalked for about $\frac{1}{3}$ of their length, M_3 and Cu_1 united.

Forewings: No costal fold in male. Ground color grayish fuscous, each scale tipped with white. Costa strigulated with dark fuscous and white, most conspicuously near apex, becoming obscure basally. Narrow orange brown subcostal patch near apex. Ocelloid patch conspicuous, white, with 2 horizontal blackish dashes. In some examples, lighter and darker scales are arranged in poorly defined longitudinal rows, giving wing a somewhat striated appearance. Fringe consisting of 3 rows of white tipped dark fuscous scales. Underside fuscous with costal strigulations clearly indicated.

Hindwings: Fuscous, barely lighter than forewing. Fringe pale fuscous with 2 darker bands.

Length of forewing: Male: ($N = 3$) 4.9–5.3 mm., average 5.1 mm.; female: ($N = 2$) 4.8, 5.0 mm.

Male genitalia (Fig. 12): Valvae without rudimentary clasper.

Female genitalia (Fig. 17): Ovipositor elongate; ostium bursae funnel shaped, lightly sclerotized; ductus seminalis from middle of ductus bursae; bursa lightly scobinate, with 2 thornlike signa.

Holotype (Fig. 4).—♂, Brewster Co., Texas, Big Bend National Park, Dugout Wells, 28-IX-81, collected by E. Knudson and deposited in the National Museum of Natural History.

Paratypes.—Jeff Davis Co., Texas, Davis Mountains State Park, 25-VIII-79, 1 ♂; Hidalgo Co., Texas, Santa Ana Refuge, 14-XI-81, 1 ♀, 30-XI-81, 1 ♂; Cameron Co., Texas, South Padre Island, 24-X-82, 1 ♀; all collected by E. Knudson.

Remarks.—Although this new species does not closely resemble any other known *Suleima*, it falls into this genus by virtue of the male genitalia, the wing venation, and the absence of a costal fold in the male. The moth closely resembles *Phaneta ochroterminana* (Kearfott), but may be easily distinguished by male genitalia and wing venation.



10



13



11



14



12



15

Figs. 10–15. Male genitalia. 10, *Phaneta musetta*, holotype, slide USNM 25473. 11, *P. clarkei*, paratype, slide AB 2196, Cottle Co., Tex., Paducah (Matador Wildlife Management Area), 4-VI-70, A. and M. E. Blanchard, colls. 12, *Suleima mendaciana*, holotype, slide ECK 186. 13, *Eucosma ustulatana*, paratype, slide ECK 61, Washington Co., Tex., Brenham, 18-VI-79, E. Knudson, coll. 14, *E. sierrae*, paratype, slide AB 2151, Culberson Co., Tex., Sierra Diablo Wildlife Management Area, 1-IX-69, A. and M. E. Blanchard, colls. 15, *Gretchena nymphana*, paratype, slide ECK 510, Warren Co., Miss., Vicksburg, 25-III-82, B. Mather, coll. Lines = 1 mm.

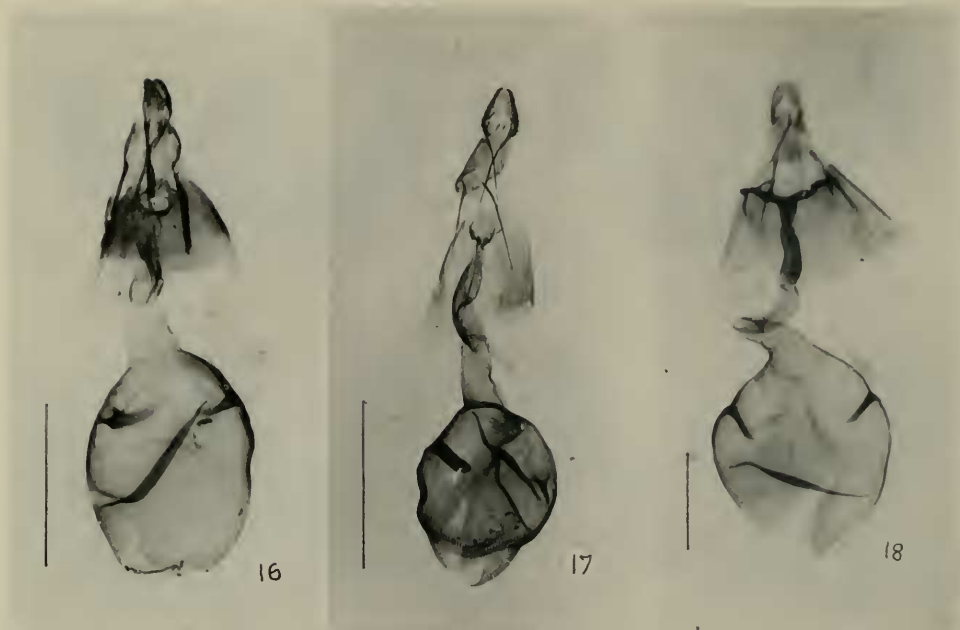
Eucosma ustulatana Blanchard and Knudson, NEW SPECIES

Figs. 6, 13

Description.—*Head*: Front and vertex rough scaled, dark orange brown. Labial palpus exceeding front by 1 eye diameter, yellowish brown, 3rd segment blackish. Antenna simple, brown, rings of scales encircling each segment. Collar brown.

Thorax: Tegula, patagia, and mesonotum dark brown.

Forewings: Ground color chocolate brown, composed of a mixture of dark brown, pale orange brown, and light ochreous scales. Costal fold extending over basal $\frac{1}{3}$. Costa beyond fold strigulate with light ochreous and dark brown. Several strigulations near apex long and extend over ocelloid patch toward termen, light ochreous scales giving way to metallic silvery scales and dark brown scales be-



Figs. 16–18. Female genitalia. 16, *Phaneta musetta*, paratype (Fig. 2), slide ECK 537. 17, *Suleima mendaciana*, paratype (Fig. 5, dissected after photo), slide ECK 647. 18, *Gretchena nymphana*, paratype, slide 571, Anderson Co., Tex., Gus Engeling Wildlife Management Area, 4-IV-81, E. Knudson, coll. Lines = 1 mm.

coming pale orange brown. Ocelloid patch pale orange brown with 3 horizontal blackish dashes, and bordered by narrow rows of metallic silvery scales. Obscure lighter patch on mid-dorsum, composed mainly of light ochreous scales, peppered with dark brown scales. Fringe composed of 3 rows of scales banded with light ochreous and blackish brown. Underside of forewing dark brown, unmarked, except for costal strigulations.

Hindwings: Uniform dark brown; fringe contrasting light ochreous, with brown inner band.

Length of forewing: Male: ($N = 2$) 6.0, 7.0 mm.

Male genitalia: As in Fig. 13.

Holotype (Fig. 6).—♂, Washington Co., Texas, Brenham, 4-VI-79, collected by E. Knudson and deposited in the National Museum of Natural History.

Paratype.—Same locality as holotype, 18-VI-79, 1 ♂, collected by E. Knudson.

Remarks.—This somberly colored species bears close resemblance to *Eucosma eumaea* Meyrick in male genitalia, differing only in the smoother, more evenly convex anterior margin of the harpe. From this species, it differs also in color and maculation, *eumaea* being mainly dark gray with obscure blackish markings.

Eucosma sierrae Blanchard and Knudson, NEW SPECIES

Figs. 7, 14

Description.—*Head*: Front and vertex brownish white. Labial palpus white, exceeding front by 1 eye diameter. Antenna light brown, simple, rings of scales completely encircling each segment. Collar light brown.

Thorax: Tegula, patagia, and mesonotum light brown.

Forewings: Costal fold extending over basal $\frac{1}{4}$. Ground color light brown with many small patches of whitish scales, giving a dappled appearance under magnification. Fairly well defined dark basal patch extending from dorsal margin, vertically to cell, and fading to costa. Conspicuous dark brown subtriangular dorsal patch just before tornus, space between basal and subternal patches being more or less suffused with whitish. Ocelloid patch obscure, whitish, bordered by vertical bands of slightly iridescent scales, and containing 3 obscure dark brown spots. Fringe consists of multiple scale rows banded with light and dark brown. Underside brownish fuscous, unmarked, except for costal strigulations.

Hindwings: Light fuscous, fringe banded with paler shades.

Length of forewing: Male: ($N = 4$) 9.2–11.0 mm., average 10.1 mm.

Male genitalia: As in Fig. 14.

Holotype (Fig. 7).— δ , Culberson Co., Texas, Sierra Diablo Wildlife Management Area, 6400' 30-VIII-70, collected by J. G. Franclemont and deposited (by JGF) in the National Museum of Natural History.

Paratypes.—Same location as holotype, 1-IX-69, 1 δ ; 30-VIII-70, 1 δ ; 31-VIII-70, 1 δ ; collected by A. and M. E. Blanchard.

Remarks.—This species has a unique wing pattern and male genitalia in the genus, although there are similarities to *Eucosma mirosignata* Heinrich, with which it keeps company in the Sierra Diablo.

***Gretchena nymphana* Blanchard and Knudson, NEW SPECIES**

Figs. 8, 9, 15, 18

Description.—*Head*: Front and vertex buff (pale yellowish brown). Labial palpus buff, exceeding front by 1 eye diameter. Antenna simple, buff, scaled dorsolaterally, finely pubescent beneath. Collar buff.

Thorax: Tegula and patagia light brown; mesonotum buff.

Forewings: Ground color buff, with faint brownish costal strigulations. Wing conspicuously marked with a wavy black line, extending from apex to dorsal margin near base; thick and continuous over apical $\frac{2}{3}$, attenuated and interrupted over basal $\frac{1}{3}$. Some fuscous scaling in cell adjacent to black line. Ocelloid patch absent. Fringe buff, scales banded with brown. Underside brownish fuscous, unmarked, except for faint costal strigulations.

Hindwings: Fuscous, fring buff.

Length of forewing: Male: ($N = 2$) 8.3, 8.4 mm.; female ($N = 3$) 8.6–9.0 mm., average 8.7 mm.

Male genitalia: As in Fig. 15.

Female genitalia (Fig. 18): Ostium bursae funnel shaped, with elongated slightly curved, sclerotized, transverse plate on ventral rim. Caudal $\frac{1}{2}$ of ductus bursae sclerotized; ductus seminalis from ductus bursae near middle; bursa membranous with 2 blunt, thornlike signa.

Holotype (Fig. 8).— δ , Anderson Co., Texas, Tennessee Colony (Gus Engeling Wildlife Management Area), 15-IV-68, collected by A. and M. E. Blanchard and deposited in the National Museum of Natural History.

Paratypes.—Same location as holotype, 4-IV-81, 1 ♀ , collected by E. Knudson; Warren Co., Mississippi, Vicksburg, 25-III-82, 1 δ , 1 ♀ , collected by Bryant Mather;

Laurel Co., Kentucky, Fariston, 2-V-35, 1 ♀, collected by A. F. Braun (in the Academy of Natural Sciences, Philadelphia).

Remarks.—This species is distinguished from other members of the genus by its pale yellowish brown ground color. The male genitalia are similar to *Gretchena biangulana* Walsingham, but in that species, the apex of the cucullus is more bluntly rounded.

ACKNOWLEDGMENTS

The authors are deeply grateful to J. F. Gates Clarke, whose determinations have provided the impetus for this work, and for his help in reviewing the manuscript and providing some of the comments that appear herein. We also thank Don Davis, for his prior examination of the holotype of *Gretchena nymphana*. Additionally we thank Bryant Mather and Richard L. Brown for providing additional type material of this species. Finally, we thank officials of the U.S. National Park Service and the Texas Parks and Wildlife Department for their help in providing access to collecting in the state and federal parks and wildlife refuges that are mentioned above.

Notice of a New Publication

A Systematic Study of the Japanese Chloropidae (Diptera). By Kenkichi Kamiya, Biological Laboratory, School of Medicine, Kurume University, Fukuoka, Japan. Memoirs of the Entomological Society of Washington, Number 11, 370 pp. Cost, \$18.00.

A revised classification of the family Chloropidae of Japan is presented, including a historical review, geographical distribution, genus and species descriptions, discussions of specific relations and generic groupings, food habits, and references. Three subfamilies, 53 genera, and 143 species are recognized including 2 new genera, 1 new subgenus, and 34 new species. Many genera and species are new to Japan. Keys are provided for the subfamilies, genera, and species of Japan. For some genera that contain many species common to the Oriental Region, complete keys to the Oriental species are given. Male genitalia and female terminalia of most species are illustrated in the 430 figures.

This publication may be ordered from the Custodian, Entomological Society of Washington, % Department of Entomology NHB 168, Smithsonian Institution, Washington, D.C. 20560.